

Korea-China Team Develops Drug-delivery Nanotech for Brain Tumors

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Researchers from Korea University Guro Hospital (KUGH) and Sun Yat-sen University Hospital have discovered a biomarker specific to malignant brain tumors and succeeded in developing a nano-technology that delivers drugs to only brain tumor cells.

The joint research team expects that anticancer-nano drugs using the technology will maximize the cancer-treatment effect by targeting only brain cancer cells.

The international team, led by Professors Jung Kyu-ha and Kang Bo-ram at [KUGH](#), and Professors Phei Er Saw and Xiaoding Xu at [Sun Yat-sen Hospital](#), compared and analyzed the gene big data of about 23,000 people with 17 major cancers and confirmed that brain tumors had the second-highest expression of EDB-FN (extra-domain B of Fibronectin), following head and neck cancer.

The team also confirmed that the protein appeared in more than 98 percent of brain tumor tissues. The patient group with high protein expression also had 5.5 times higher risk of cancer progression than the patient group with low expression.

"The results confirmed the possible use of a brain tumor-specific biomarker through a multi-omics analysis that simultaneously analyzes gene changes and proteins," the team said.

Aside from the discovery, the research team developed a nano-drug delivery technology that targets EDB-FN in malignant brain tumors by controlling nanometer-sized particles' properties and functions.

The Korean and Chinese researchers also confirmed that their nano-drug improved anticancer treatment effect by selectively delivering drugs only to brain tumors.

"This study is significant in that it confirmed the possibility of targeting biomarkers for

malignant brain tumors, an incurable disease," Professor Jung said. "While many limiting factors exist in targeting the cure of malignant brain tumors, nano-drug delivery technology will be of great value in clinical use as a new drug delivery platform targeting malignant brain tumors."

Read the [original article](#) on Korea Biomedical Review (KBR).